ABSTRACT

BORONIC ACID THROMBIN INHIBITORS

A thrombin inhibitor selected from boronic acids of formula (I), and salts, prodrugs and prodrug salts thereof: wherein X is H (to form NH_2) or an amino-protecting group; aa^1 is an amino acid residue having a side chain selected from formula (A) and (B)-$(CO)_a$-$(CH_2)_b$-D_c-$(CH_2)_d$-E (A), -$(CO)_a$-$(CH_2)_b$-D_c-$C_e(E^1)(E^2)(E^3)$ wherein E^1, E^2 and E^3 are 5-6 membered saturated or unsaturated hydrocarbyl rings, or one of E^1 , E^2 and E^3 is hydrogen and the other two are a said hydrocarbyl ring, E, E^1, E^2 and E^3 optionally being halogenated when saturated and mandatorily being halogenated when unsaturated, a particular halogen being fluorine; aa^2 is a residue of an amino acid which binds to the thrombin S2 subsite; and R^9 is a straight chain alkyl group interrupted by one or more ether linkages or R^9 is -(CH2)m W and W is -OH or halogen.